# THE AMERICAN MIDLAND NATURALIST

Founded by J. A. Nieuwland, C.S.C.

**Editor**

**William E. Evans**

Stephen P. Vives, Statesboro, Georgia ..... Ichthyology
Harald E. Esch, Notre Dame, Indiana ..... Animal Behavior
Thomas Platt, Notre Dame, Indiana ..... Parasitology
Joan G. Ehrenfeld, New Brunswick, New Jersey ..... Vegetation Ecology
Diane Essex-Sorlie, Urbana, Illinois ..... Biological Statistics
Alicia V. Linzey, Indiana, Pennsylvania ..... Mammalogy
Richard J. Jensen, Notre Dame, Indiana ..... Plant Systematics
Leslie Carraway, Corvallis, Oregon ..... Mammalogy
Daniel J. Twedt, Vicksburg, Mississippi ..... Ornithology
R. Mark Brigham, Regina, Saskatchewan, Canada ..... Animal Ecology
Elizabeth Elle, Burnaby, British Columbia, Canada ..... Plant Population Ecology
Brian D. Greene, Springfield, Missouri ..... Herpetology
Michael C. Miller, Cincinnati, Ohio ..... Aquatic Ecology
Caryn Vaughn, Norman, Oklahoma ..... Invertebrate Zoology
Robert S. Boyd, Auburn, Alabama ..... Entomology
Howard Neufield, Boone, North Carolina ..... Plant Physiology
Paul Zedler, Madison, Wisconsin ..... Vegetation Ecology

Vol. 150, 2003

Dates of Publication

| | | |
|---|---|---|
| No. 1 | July 2 | 2003 |
| No. 2 | October 1 | 2003 |

PUBLISHED BY THE UNIVERSITY OF NOTRE DAME

NOTRE DAME, INDIANA

CONTENTS

No. 1, July 2003

Analysis of Spatial Patterns and Spatial Associations between the Invasive Tree-of-Heaven (Ailanthus altissima) and the Native Black Locust (Robinia pseudoacacia) ..... Lara J. Call and Erik T. Nilsen 1

Prescribed Fire's Impact on Water Quality of Depressional Wetlands in Southwestern Georgia .... Juliann Battle and Stephen W. Golladay 15

The Effects of Isolation, Habitat Area and Resources on the Abundance, Density and Movement of the Butterfly Parnassius smintheus ..... Stephen F. Matter, Jens Roland, Nusha Keyghobadi and Kris Sabourin 26

Status of the Freshwater Mussel Communities of the Sydenham River, Ontario, Canada ..... Janice L. Metcalfe-Smith, Joanne DI Maio, Shawn K. Staton and Shane R. De Solla 37

Population Differences in Effects of Fish on Physa integra Refuge Use ..... Randall J. Bernot and Kyle Whittinghill 51

Geomorphic, Water Quality and Fish Community Patterns Associated with the Distribution of Notropis topeka in a Central Missouri Watershed ..... M. A. Bayless, M. G. McManus and J. F. Fairchild 58

Fitness Costs and Benefits Associated with Dispersal in Northern Bobwhites (Colinus virginianus) Darrell E. Townsend, II, David M. Leslie, Jr., Robert L. Lochmiller, Stephen J. DeMaso, Scott A. Cox and Alan D. Peoples 73

Changes in Breeding Bird Populations with Habitat Restoration in Northern Iowa ..... Robert J. Fletcher, Jr. and Rolf R. Koford 83

Ruffed Grouse (Bonasa umbellus) Brood Microhabitat Selection in the Southern Appalachians .. G. Scott Haulton, Dean F. Stauffer, Roy L. Kirkpatrick and Gary W. Norman 95

Relationship of Ruffed Grouse (Bonasa umbellus) Home Range Size to Landscape Characteristics ..... Todd M. Fearer and Dean F. Stauffer 104

Additional Habitat, Diet and Range Information for the White-footed Vole (Arborimus albipes) .. Tom Manning, Chris C. Maguire, Katherine M. Jacobs and Daniel L. Luoma 115

Habitat Associated with Daytime Refugia of Fox Squirrels in a Longleaf Pine Forest ..... L. Mike Conner and Ivy A. Godbois 123

Franklin's Ground Squirrel (Spermophilus franklinii) in Illinois: A Declining Prairie Mammal? .. Jason M. Martin, Edward J. Heske and Joyce E. Hofmann 130

Composition and Demographics of Beaver (Castor canadensis) Colonies in Central Illinois ..... Stanley T. McTaggart and Thomas A. Nelson 139

Influence of Canopy Closure and Shrub Coverage on Travel along Coarse Woody Debris by Eastern Chipmunks (Tamias striatus) ..... Patrick A. Zollner and Kevin J. Crane 151

Use of Bison Wallows by Anurans on Konza Prairie ..... Nicole M. Gerlanc and Glennis A. Kaufman 158

Body Mass and Antler Development Patterns of Rocky Mountain Elk (Cervus elaphus nelsoni) in Michigan ..... Louis C. Bender, Elaine Carlson, Stephen M. Schmitt and Jonathan B. Haufler 169

## Notes and Discussion

Leaf Scraping Beetle Feces are a Food Resource for Tree Hole Mosquito Larvae ..... Matthew P. Daugherty and Steven A. Juliano 181

The Relationship between Breeding by the Gopher Frog, Rana capito (Amphibia: Ranidae) and Rainfall .... John B. Jensen, Mark A. Bailey, Emmett L. Blankenship and Carlos D. Camp 185

Visual Signals in the Crepuscular Common Nighthawk (Chordeiles minor) ..... Aaron J. Roth, George C. Argyros and Rebecca B. Browning 191

Distribution of Eastern Chipmunks (Tamias striatus) in the Shawnee National Forest, Southern Illinois: Why Are They Missing from the Eastern Shawnee? ..... Susannah S. French, Kevin C. Rowe and Edward J. Heske 194

CONTENTS

No. 2, October 2003


Differences in Sedge Fen Vegetation Upstream and Downstream from a Managed Impoundment ..... Kurt P. Kowalski and Douglas A. Wilcox 199

Lichens Promote Flowering of Opuntia fragilis in West-Central Wisconsin ..... James P. Bennett, Charles R. Bomar and Cynthia A. Harrington 221

Seasonal Variation in Photosynthetic Rates Influences Success of an Invasive Plant, Garlic Mustard (Alliaria petiolata) ..... Caroline V. Myers and Roger C. Anderson 231

Fitness Consequences of Herbivory on Quercus alba ..... Cris G. Hochwender, Victoria L. Sork and Robert J. Marquis 246

Seasonal Differences in Predator-prey Behavior in Experimental Streams ..... Christopher M. Pennuto 254

Female Reproductive Life-history Traits of the Rock Darter, Etheostoma rupestre, from Flat Creek, Alabama ..... Rebecca D. Joachim, J. Michael Guill and David C. Heins 268

Seasonal and Prey-size Dietary Patterns of Black Ratsnakes (Elaphe obsoleta obsoleta) ..... Patrick J. Weatherhead, Gabriel Blouin-Demers and Karen M. Cavey 275

Increased Lesser Earless Lizard (Holbrookia maculata) Abundance on Gunnison's Prairie Dog Colonies and Short Term Responses to Artificial Prairie Dog Burrows ..... Jon R. Davis and Tad C. Theimer 282

A Comparison of Conservation Reserve Program Habitat Plantings with Respect to Arthropod Prey for Grassland Birds ..... N. E. McIntyre and T. R. Thompson 291

Occurrence of Second Broods in Mallards in the Midwest ..... Richard E. Olsen, Tina Yerkes and John W. Simpson 302

Double Captures of House Mice (Mus musculus) with Information on Genetic Relatedness ..... Lee C. Drickamer, David M . Wagner and Ami Sessions Robinson 308

Nest Site Characteristics of the Endangered Northern Flying Squirrel (Glaucomys sabrinus coratus) in Southwest Virginia ..... H. Mundy Hackett and John F. Pagels 321

Mortality of Bats at a Large-scale Wind Power Development at Buffalo Ridge, Minnesota ..... Gregory D. Johnson, Wallace P. Erickson, M. Dale Strickland, Maria F. Shepherd, Douglas A. Shepherd and Sharon A. Sarappo 332


## Notes and Discussion


Evidence of Intermediate and Asymmetrical Behavioral Isolation Between Orangethroat and Orangebelly darters (Teleostei: Percidae) ..... Tamra C. Mendelson 343

Effect of Arboreal Activity on Species Composition and Abundance Estimates of Rodents in a Chaparral Habitat in Southern California ..... Juha Laakkonen 348

Home-range Size and Habitat Used by the Northern Myotis (Myotis septentrionalis) ..... Sheldon F. Owen, Michael A. Menzel, W. Mark Ford, Brian R. Chapman, Karl V. Miller, John W. Edwards and Petra Bohall Wood 352

Author Index, Volume 150 ..... 360

Subject Index, Volume 150 ..... 361

Contents, Volume 150 ..... 363